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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/736,703 | 12/17/2003 | Woo Young So | 6161.0016.D1 | 5676 |
| 7590 | 10/17/2005 | | EXAMINER | |
| McGuireWoods Suite 1800 1750 Tysons Boulevard McLean, VA 22102 | | | | RICHARDS, N DREW |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2815 | |

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/736,703 | SO ET AL. | |
| | Examiner | Art Unit | |
| | N. Drew Richards | 2815 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 05 August 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 19-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 19-22 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 17 December 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. 10/077,771.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1: A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/5/05 has been entered.

Product-by-Process Limitations

2. While not objectionable, the Office reminds Applicant that "product by process" limitations in claims drawn to structure are directed to the product, *per se*, no matter how actually made. *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also, *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wethheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al.*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product *per se* which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or otherwise. Note that applicant has the burden of proof in such cases, as the above case law makes

clear. Thus, no patentable weight will be given to those process steps which do not add structural limitations to the final product.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 19-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Shimada (U.S. Patent No. 6,323,051 B1).

Shimada discloses an active matrix display device in figures 1(a)-7 and on columns 1-16. Specifically, Shimada discloses a device comprising:

an insulation substrate 101 (figure 7);

a thin film transistor 121 formed on the insulation substrate 101, including a semiconductor layer 104/105 where source/drain S/D regions are formed, gate electrode 102 and source/drain electrodes 106/107 respectively connected to the source/drains regions S/D (figures 6 and 7);

an insulation film 108 formed over the insulation substrate 101, having an opening portion (figure 7, the opening portion is not labeled but is formed on the right side of the figure); and

a pixel electrode labeled "107(106)" as a lower electrode (figure 7, pixel electrode "107(106)" is a "lower" electrode as it is at a lower elevation than the source/drain electrodes), wherein the source/drain electrodes have a dual-layered structure of a transparent conductive layer 107 and a metal layer 106, the metal layer being enclosed by the insulation film 108, wherein the pixel electrode "107(106)" extends from a portion of the transparent conductive layer 107 forming any one of the source/drain electrodes 106/107 and is exposed through the opening portion of the insulation film 108 (figure 7).

With regard to claims 20 and 21, though Shimada do not use the term "passivation" with regards to their insulation film 108, the layer is disclosed as being a "protection" layer of silicon nitride. This protection layer of silicon nitride is considered to read on the claimed "passivation" layer as it passivates the surfaces below it and effectively functions as a passivation layer. The limitations of the layer being "patterned" (claim 20) or "reflowed" (claim 21) are product-by-process limitations that do not structurally distinguish over the prior art.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada (U.S. Patent No. 6,323,051 B1) as applied to claims 19-21 above, and further in view of Shirasaki et al. (U.S. Patent No. 5,895,692).

Shimada does not teach an organic EL layer formed on a portion of the pixel electrode exposed through the opening portion, wherein the organic EL layer is insulated from the metal layer of the source/drain electrodes. Shimada teach on column 1 lines 49-54, for example, a liquid crystal material between the pixel electrode and a counter electrode. One of ordinary skill in the art would recognize that the liquid crystal material used in conjunction with the pixel electrode shown in figure 7 would be disposed so that the liquid crystal contacted the pixel electrode.

Shirasaki et al. teach an organic electroluminescent device in an active matrix LCD device with a thin film transistor 31 and a pixel electrode 34 in figures 11A and 11B. Shirasaki et al. teach an organic EL layer 36 as the luminescent layer.

In using the organic EL layer of Shirasaki et al. in the active matrix with the specific TFT and pixel structure of figure 7 of Shimada, the organic EL layer would be formed on a portion of the pixel electrode exposed through the opening portion and the organic EL layer would be insulated from the metal layer of the source/drain electrodes.

Shimada and Shirasaki et al. are combinable because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to form the TFT and pixel structure of Shimada in an organic EL device with an organic EL layer. The motivation for doing so is that organic EL devices advantageously allow a luminescent wavelength to be optionally set since optional

fluorescent pigment can be dispersed and a failure due to the crystallization of a luminescent material can be prevented. Therefore, it would have been obvious to combine Shimada with Shirasaki et al. to obtain the invention of claim 22.

Response to Arguments

7. Applicant's arguments filed 8/5/05 have been fully considered but they are not persuasive.

Applicant has argued that a layer enclosed by the insulating layer 108 is a transparent conductive layer 107, not a metal electrode. This is not persuasive for two reasons. First, layer 107 extends into the opening in the insulating layer and thus is not enclosed by the insulating layer. Second, layer 106 which is a metal electrode is enclosed by the insulating layer 108, thus reading on the limitations of the claim.

Applicant further argues that the Examiner has contended substituting layer 107 with 106. Applicant presents various arguments as to why substituting or changing the order of the layers is not taught by Shimada. These arguments are not persuasive as the examiner has nowhere contended that any of the layers need to be moved, rearranged, or substituted for each other. The rejection of claims 19-21 is a rejection under 35 USC 102 as being anticipated. No modification of the reference has been suggested by the examiner and in fact no modification is needed to anticipate the claims.

Applicant further argues that pixel shrinkage due to exposure of the metal edge cannot occur in Shimada. It is not understood how this argument relates to the

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invention as claimed. The claims do not recite any pixel shrinkage or exposure of a metal edge.

Applicant then argues that Shimada does not show a pixel electrode 126 in figure 7 and thus cannot teach the pixel electrode extending from a portion of the transparent conductive layer forming any one of the source/drain electrodes and exposed through the opening in the insulation film. First, though the label "126" is not used in figure 7, the pixel electrode is clearly shown and mislabeled "107(106)" in the same manner that the pixel electrode is labeled in figure 1(d). The use of the label "107(106)" instead of "107(126)" is clearly a typographical error. As evidence that the portion in figure 7 exposed through the opening in the insulation film in the pixel electrode, Shimada disclose removing a part of the insulating film (creating the opening) to form the pixel electrode. See column 2 lines 37-50. Thus, the exposed portion of the transparent conductive layer 107 is the pixel electrode. Further, as stated by applicant on page 4 line 8 of their response (the third line in the arguments dealing with the 35 USC 102 rejection), "Shimada merely discloses that reference numeral 107 of Shimada is a pixel electrode." Thus applicant has admitted that layer 107 creates the pixel electrode. Layer 107 extends from the drain (labeled D in figure 7) to under the opening in the insulation film where is constitutes the pixel electrode.

Applicant also argues that Shimada does not disclose an insulation film coating the metal electrode. As the examiner previously stated in the Advisory Action mailed 7/18/05, the claims do not require the insulation film "coat" the metal electrode. The claims merely require the insulation film "enclose" the metal layer of the electrode. As

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clearly seen in figure 7 of Shimada, insulation film 108 encloses metal layer 106.

Nowhere is metal layer 106 exposed through the insulation film.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Drew Richards whose telephone number is (571) 272-1736. The examiner can normally be reached on Monday-Friday 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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